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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,698	03/26/2001	David F. May	AEI0006.US	9281

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07/06/2005

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EXAMINER

COOLEY, CHARLES E

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/817,698	Applicant(s) MAY ET AL.	
	Examiner Charles E. Cooley	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 46-64 is/are pending in the application.
- 4a) Of the above claim(s) 46-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 56-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 46-64 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

NON-FINAL OFFICE ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 25 APR 2005 has been entered.

Election By Original Presentation

2. Newly submitted method claims 46-55 are directed to an invention that cannot be examined via submission of an RCE since Applicant may not switch inventions as a matter of right via an RCE submission (see MPEP 706.07(h)). Accordingly, since apparatus claims were examined prior to the submission of the RCE and throughout the prior prosecution, the invention defined by the apparatus claims has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 46-55 are withdrawn from consideration as being directed to a non-elected invention. Apparatus claims 56-64 are being treated on the merits.

Priority

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3. Acknowledgment is made of applicant's claim for domestic priority under 35 U.S.C. § 119(e).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 56, 57, 58, 63, and 64 are rejected under 35 U.S.C. 102(b) as being anticipated by Greenstein (US 5,207,634).**

For purposes of construing the scope of the pending claims throughout this office action, the recited "filter" is considered but a rotor or other such rotary member that is capable of separating a substance therein into different phases or densities within the broad meaning of the term.

Accordingly, the patent to Greenstein discloses a non-rotating housing 17; a filter 12 within the housing rotatable about an axis for separating substances within 14; a brushless DC motor 32 coupled to the filter 12 to spin the rotor; and a speed control circuit 38 for controlling speed of the filter.

The recited rotational speeds have been considered but fail to impart or invoke any means or structure to the apparatus claims which defines over the applied prior art and the motors of the prior art are considered most capable of rotating the filter within the recited ranges, particularly when the motor is coupled to a speed control circuit as in

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this instance. Nonetheless, Greenstein teaches the recited speeds at col. 1, lines 24-27 and col. 4, lines 65-68.

6. Claims 56, 57, 63, and 64 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Der Herberg (US 5,160,609).

The patent to Van Der Herberg discloses a non-rotating housing 2; a filter 3 within the housing rotatable about an axis for separating substances therein; and a DC motor 4 coupled to the filter 3 to spin the rotor. The recited rotational speeds have been considered but fail to impart or invoke any means or structure to the apparatus claims which defines over the applied prior art and the motors of the prior art are considered most capable of rotating the filter within the recited ranges, particularly when the motor is coupled to a speed control device as in this instance (col. 2, lines 18-21 and col. 5, lines 57-60).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 56, 57, 58, 63, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vado et al. (US 5,656,164) in view of Pavlovich et al. (US 5,892,307).

The patent to Vado et al. (US 5,656,164) discloses a centrifuge apparatus comprising a non-rotating housing 2; a filter 9 within the housing rotatable about an axis for separating substances within 9; an electric motor 3 coupled to the filter 9 to spin the rotor; and a speed control device 17, 18 for controlling speed of the filter. Vado et al. does not disclose a brushless DC motor but does suggest that the motor may take other forms (col. 2, lines 13-15). The patent to Pavlovich et al. teaches a brushless DC motor (Fig. 1) and that brushless DC motors are most suitable for centrifuges. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have substituted the electrical motor in Vado et al. with a brushless DC motor in such a centrifuge environment as taught by Pavlovich et al. for the purposes of increasing reliability of the motor by obviating the need for brushes which prove to be

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unreliable and to improve the electromechanical and power output parameters of the motor (col. 1, lines 31-47).

The recited rotational speeds have been considered but fail to impart or invoke any means or structure to the apparatus claims which defines over the applied prior art and the motors of the prior art are considered most capable of rotating the filter within the recited ranges, particularly when the motor is coupled to a speed control circuit as in this instance. Nonetheless, Pavlovich et al. teaches the recited speeds at col. 6, lines 25-27 and col. 10, lines 30-32.

10. Claims 56, 58, 59, 60, 61, 63, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gold et al. (US 2,745,217) in view of Pavlovich et al. (US 5,892,307).

The patent to Gold et al. (US 2,745,217) discloses a centrifuge apparatus comprising a non-rotating housing 14, 16; a filter 17 within the housing rotatable about an axis for separating substances within 17; an electric motor 25 coupled to the filter 17 to spin the rotor; and an ejector vacuum device 27 for creating a vacuum in the filter 17 and housing. Gold et al. does not disclose a brushless DC motor. The patent to Pavlovich et al. teaches a brushless DC motor (Fig. 1) and that brushless DC motors are most suitable for centrifuges. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have substituted the electrical motor in Gold et al. with a brushless DC motor in such a centrifuge environment as taught by Pavlovich et al. for the purposes of increasing reliability of the

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motor by obviating the need for brushes which prove to be unreliable and to improve the electromechanical and power output parameters of the motor (col. 1, lines 31-47).

The recited rotational speeds have been considered but fail to impart or invoke any means or structure to the apparatus claims which defines over the applied prior art and the motors of the prior art are considered most capable of rotating the filter within the recited ranges. Nonetheless, Pavlovich et al. teaches the recited speeds at col. 6, lines 25-27 and col. 10, lines 30-32.

11. Claims 56, 58, 59, 60, 61, 62, 63, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penny (US 5,904,841) in view of Pavlovich et al. (US 5,892,307).

The patent to Penny discloses a centrifuge apparatus comprising a non-rotating housing 14; a filter 12 within the housing rotatable about an axis for separating substances within 12; a rotor drive 18 to spin the rotor; and a venturi vacuum device 112 for creating a vacuum; and an engine that would inherently have an electrical system in the environment in which the device Penny is intended to be employed.

Penny does not disclose a brushless DC motor. The patent to Pavlovich et al. teaches a brushless DC motor (Fig. 1) and that brushless DC motors are most suitable for centrifuges. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have substituted the rotor drive in Penny with a brushless DC motor in such a centrifuge environment as taught by Pavlovich et al. for the purposes of positively driving the filter at a selected speed as opposed to an

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unreliable reaction drive which is not speed controllable and to increase the reliability of the motor by obviating the need for brushes which prove to be unreliable and to improve the electromechanical and power output parameters of the motor (col. 1; lines 31-47).

The electrical system inherent to Penny is deemed most capable of providing the electrical energy needed to drive the DC motor.

The recited rotational speeds have been considered but fail to impart or invoke any means or structure to the apparatus claims which defines over the applied prior art and the motors of the prior art are considered most capable of rotating the filter within the recited ranges. Nonetheless, Pavlovich et al. teaches the recited speeds at col. 6, lines 25-27 and col. 10, lines 30-32.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited prior art discloses brushless DC motors and controls therefor.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in cursive script, appearing to read "Charles E. Cooley", followed by a stylized flourish.

Charles E. Cooley
Primary Examiner
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29 June 2005